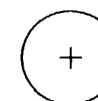


STATION NAME	LATITUDE	LONGITUDE
1 KITT PEAK AZ	N 31 57 22	W 111 36 42
2 BIG PINE CA	N 37 13 54	W 118 16 34
3 VANDENBURG AFB CA	N 34 43 00	W 120 34 00
4 DENVER CO	N 39 43 00	W 104 46 00
5 WASHINGTON DC	N 38 48 00	W 76 52 00
6 EGLIN AFB FL	N 30 29 00	W 86 32 00
7 MAUNA KEA HI	N 19 48 16	W 155 27 29
8 NORTH LIBERTY IA	N 41 46 17	W 91 34 26
9 MARYLAND POINT MD	N 38 22 26	W 77 14 00
10 HANCOCK NH	N 42 56 01	W 71 59 12
11 LOS ALAMOS NM	N 35 46 30	W 106 14 42
12 PIE TOWN NM	N 34 18 04	W 108 07 07
13 SOCORRO NM	N 34 04 43	W 107 37 04
14 USNR NH	N 32 23 00	W 106 29 00
15 HINOT AFB ND	N 48 15 00	W 101 17 00
16 ARECIBO PR	N 18 20 37	W 66 45 11
17 FORT DAVIS TX	N 30 38 06	W 103 56 39
18 ST CROIX VI	N 17 45 31	W 64 35 03
19 BREWSTER WA	N 48 07 53	W 119 40 55
20 GREEN BANK WV	N 38 25 59	W 79 50 24

Figure 9

16



REGIONS WHERE CONDITIONAL LICENSING NOT PERMITTED  
 10.6 - 10.68 GHz BAND  
 g:\USER\KNIGHT\PROJECT\10GHZ.US\RECORD-2  
 2 Mar 1998 DOS-PC



## Obsolete References to FCC Parts 21 and 94

FCC Rule Part	Current Reference	Revised Reference	Notes
<b>Part 25</b>			<b>Satellite Communications</b>
25.251(a)	21.100(d)	101.103(d)	Frequency coordination procedure
	21.706(c)	101.21(f)	Frequency coordination requirements
<b>Part 74</b>			<b>Auxiliary Broadcast Service</b>
74.502(c)	Part 21, 94	Part 101	Aural Broadcast Auxiliary Service
74.502(c)(1)	21.100(d)	101.103(d)	Frequency coordination procedure
74.602(g)	Part 21, 94	Part 101	Television Broadcast Auxiliary Service
	21.100(d)	101.103(d)	Frequency coordination procedure
74.602(i) <sup>1</sup>	Part 21, 94	Part 101	
74.638(a)	Part 94	Part 101	
	94.93	101.147(p)	12.2-12.7 GHz band
74.638(b)	21.100(d)	101.103(d)	Frequency coordination procedure
<b>Part 78</b>			<b>Cable Television Relay Service (CARS)</b>
78.11(g)	21.709	101.705	Renewal of station licenses
78.18(a)(4)	Part 21, 94	Part 101	
	21.100(d)	101.103(d)	Frequency coordination procedure
78.18(a)(5) <sup>2</sup>	Part 21, 94	Part 101	
78.18(a)(6) <sup>2</sup>	Part 21	Part 101	
	21.801(b)	101.803(b)	Frequencies for the Local Television Service
78.18(a)(7) <sup>2</sup>	Part 21	Part 101	
	21.801(b)	101.803(b)	Frequencies for the Local Television Service
78.36(b)	21.100(d)	101.103(d)	Frequency coordination procedure
<b>Part 90</b>			<b>Private Land Mobile Radio Services</b>
90.20(d)(70)	Part 94	Part 101	

<sup>1</sup> In §74.602, paragraph (j) was renumbered to paragraph (i). *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, CC Docket No. 92-297, FCC 97-82, Appendix A at 4 (released March 13, 1997).

<sup>2</sup> In §78.18, paragraphs (a)(6) through (a)(8) were renumbered as paragraphs (a)(5) through (a)(7). *Id.*

### **FCC License Procedure in the 23 GHz Band**

Typical Processing Time	Description of Activity
1 - 2 weeks	FCC License Application Processing in Gettysburg
2 weeks	FCC Office of Engineering and Technology
2 - 4 weeks <sup>1</sup>	IRAC Frequency Assignment Subcommittee ("FAS")
15 working days	Federal Government Agency Review
1 week	FCC Office of Engineering and Technology
2 - 4 weeks <sup>2</sup>	FCC License Application Processing in Gettysburg
2 - 6 months	Total Processing Time

<sup>1</sup> IRAC's FAS meets once a month. If a non-government license application is received shortly after the FAS monthly meeting, the application must wait for the next scheduled meeting. Additional delays may occur if an application is not placed on the FAS meeting agenda, if an application is tabled after a vote by a member agency, or if an application is referred to the full IRAC for a decision.

<sup>2</sup> FCC license application processing may take longer than 4 weeks, depending on the workload of the FCC staff.

Figure 11



## **Appendix B - Proposed FCC Rules**

- I. Part 25 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

### **PART 25 - SATELLITE COMMUNICATIONS**

1. The authority citation for Part 25 continues to read as follows:

**AUTHORITY: 47 U.S.C 701-744. Interprets or applies sec. 303, 47 U.S.C. 303. 47 U.S.C. sections 154, 301, 302, 303, 307, 309 and 332, unless otherwise noted.**

2. In Section 25.251, paragraph (a), references to Part 21 are revised to the applicable references in Part 101, to read as follows:

#### **§ 25.251 Special requirements for coordination.**

(a) The administrative aspects of the coordination process are set forth in §§101.103(d) and 101.21(f) of this chapter in the case of coordination of terrestrial stations with earth stations, and in §25.203 in the case of coordination of earth stations with terrestrial stations. The technical aspects of the coordination process are set forth in §§25.252 through 25.256.

\* \* \* \* \*

- II. Part 74 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

### **PART 74 - EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTIONAL SERVICES**

1. The authority citation for Part 74 continues to read as follows:

**AUTHORITY: Sec. 4, 302, 303, and 307 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154, 302, 303 and 307, unless otherwise noted.**

2. In Section 74.502, paragraph (c) and the last sentence in paragraph (c)(1), references to Part 21 and 94 are revised to the applicable references in Part 101, to read as follows:

**§ 74.502 Frequency assignment.**

\* \* \* \* \*

(c) The frequency bands 18,760-18,820 and 19,100-19,160 MHz are available for assignment to aural broadcast STL and intercity relay stations and are shared on a co-primary basis with other fixed services under Parts 78 and 101 of the Commission's Rules.

(1) \* \* \* Applicants may use either a two-way link or one frequency of a frequency pair for a one-way link and shall coordinate proposed operations pursuant to the procedures required in §101.103(d).

\* \* \* \* \*

3. In Section 74.602, paragraph (a), the frequency range for the 1990-2110 MHz band is amended to 1990-2130 MHz. In paragraphs (g) and (i), references to Part 21 and Part 94 are revised to the applicable references in Part 101, to read as follows:

**§ 74.602 Frequency assignment.**

(a) The following frequencies are available for assignment to television pickup, television STL, television relay and television translator relay stations. The band segments 17,700-18,580 and 19,260-19,700 MHz are available for broadcast auxiliary stations as described in paragraph (g) of this section. Additionally, the band 38.6-40.0 GHz is available for assignment without channel bandwidth limitation to TV pickup stations on a secondary basis to fixed stations. The band segment 6425-6525 MHz is available for broadcast auxiliary stations as described in paragraph (i) of this section. Broadcast network-entities may also use the 1990-2130, 6425-6525 and 6875-7125 MHz bands for mobile television pickup only.

\* \* \* \* \*

(g) The following frequencies are available for assignment to television STL, television relay stations and television translator relay stations. The provisions of Section 74.604 do not apply to the use of these frequencies. These frequencies are shared on a co-equal basis with other stations in the fixed service (see Parts 78 and 101). Applicants may use either a two-way link or one or both frequencies of a frequency pair for a one-way link and shall coordinate proposed operations pursuant to procedures required in §101.103(d).

\* \* \* \* \*

(i) *6425 to 6525 MHz - Mobile Only*. Paired and un-paired operations permitted. Use of this spectrum for direct delivery of video programs to the general public or multi-channel cable distribution is not permitted. This band is co-equally shared with mobile stations licensed pursuant to Parts 78 and 101 of the Commission's Rules. The following channel plans apply.

\* \* \* \* \*

4. In Section 74.636, the frequency range for the 1,990-2,110 MHz band is amended to 1,990-2,130 MHz in the first line of the table, to read as follows:

**§ 74.636 Power limitations.**

Transmitter peak output power shall not be greater than necessary, and in any event, shall not exceed the power listed in the table below:

Frequency band (MHz)	Maximum allowable transmitter power		Maximum allowable EIRP	
	Fixed (W)	Mobile (W)	Fixed (W)	Mobile (W)
1,990 to 2,130 .....	20.0	12.0	.....	.....
* * *				

5. In Section 74.637, paragraph (c) is revised to permit digital modulation in all Television Broadcast Auxiliary frequency bands; paragraphs (c)(1)(iii), (c)(2)(i), and (c)(2)(ii) are revised to correct typographical errors; and the table of maximum authorized bandwidth in paragraph (g) is revised, to read as follows:

**§ 74.637 Emissions and emission limitations.**

\* \* \* \* \*

(c) The mean power of any emission shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) When using frequency modulation in the bands 6425-6525 MHz, 17,700-19,700 MHz, and 31,000-31,300 MHz:

(i) \* \* \*

(ii) \* \* \*

(iii) On any frequency removed from the assigned (center) frequency by more than 250% of the authorized bandwidth: At least  $43+10 \log_{10}$  (mean output power in watts) dB, or 80 dB, whichever is the lesser attenuation.

(2) When using digital modulation:

(i) In any 1 MHz band, \* \* \*

(ii) In any 4 KHz band, the center frequency of which is removed from the assigned frequency by more than 250% of the authorized bandwidth: At least  $43+10 \log_{10}$  (mean output power in watts) dB, or 80 dB, whichever is the lesser attenuation.

\* \* \* \* \*

(g) \* \* \*

Frequency band (MHz)	Maximum authorized bandwidth (MHz)
1,990 to 2,110 .....	18 <sup>1</sup>
* * *	* * *

/1/ After a licensee has been relocated in accordance with §74.690, the maximum authorized bandwidth in the frequency band 2,025 to 2,130 MHz will be 15 MHz.

\* \* \* \* \*

6. In Section 74.638, paragraphs (a) and (b), references to Part 21 and Part 94 are revised to the applicable references in Part 101, to read as follows:

**§ 74.638 Frequency coordination.**

(a) Channels in Band D are shared with certain Private Operational Fixed Stations authorized under Part 101, §101.147(p) after September 9, 1983. \* \* \*

\* \* \* \* \*

(b) Coordination of assignments in the 6425-6525 MHz and 17.7-19.7 GHz bands will be in accordance with the procedure established in §101.103(d) *except* that the prior coordination process for mobile (temporary fixed) assignments may be completed orally and the period allowed for response to a coordination notification may be less than 30 days if the parties agree.

\* \* \* \* \*



7. In Section 74.641, the frequency range for the 1,990 - 2,110 MHz band is amended to 1,990 - 2,130 MHz in the first line of the table, to read as follows:

**§ 74.641 Antenna systems.**

(a) \* \* \*

(1) \* \* \*

Antenna Standards										
Frequency (MHz)	Category	Maximum beamwidth to 3 dB points <sup>1</sup> (included angle in degrees)	Minimum antenna gain (dBi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
1,990 to 2,130	A	5.0	n/a	12	18	22	25	29	33	39
* * *										

\* \* \* \* \*

8. In Section 74.644, paragraph (a), the frequency range for the 1,850-2,110 MHz band is amended to 1,850-2,130 MHz; and paragraph (b) is revised, to read as follows:

**§ 74.644 Minimum path lengths for fixed links.**

(a) The distance between end points of a fixed link must equal or exceed the value set forth in the table below or the EIRP must be reduced in accordance with the equation set forth below.

Frequency band (MHz)	Minimum path length (Km)
below 1,850 .....	n/a
1,850 - 2,130 .....	17
6,425 - 7,125 .....	17
12,200 - 13,250 .....	5
above 17,700 .....	n/a

(b) For paths shorter than those specified in the Table, the EIRP shall not exceed the value derived from the following equation.

$$\text{EIRP} = \text{MAX EIRP} - 40 \log [A/B], \text{ dBW}$$

Where:

EIRP = Equivalent isotropic radiated power in dBW.  
 MAX EIRP = Maximum allowable EIRP from §74.636 in dBW.  
 A = Minimum path length from the Table for the frequency band in kilometers.  
 B = The actual path length in kilometers.

NOTE: For transmitters using Automatic Transmit Power Control, EIRP that corresponds to the maximum transmit power must satisfy this requirement.

\* \* \* \* \*

9. In Section 74.651, paragraph (a)(2) is revised to read as follows:

**§ 74.651 Equipment changes.**

(a) \* \* \*

\* \* \* \* \*

(2) A change in the frequency of the operating channel or the maximum transmitter output power. For equipment using automatic transmit power control (ATPC), the license application shall state the maximum transmitter power with the ATPC function disabled.

\* \* \* \* \*

10. In Section 74.661, the frequency range for the 1,990 - 2,110 MHz band is amended to 1,990 - 2,130 MHz in the first line of the table, to read as follows:

**§ 74.661 Frequency tolerance.**

\* \* \* \* \*

Frequency Band (MHz)	Frequency Tolerance	
	Fixed (%)	Mobile (%)
1,990 to 2,130 .....	<sup>2</sup> 0.005	0.005
* * *		

\* \* \* \* \*

III. Part 78 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

#### **PART 78 - CABLE TELEVISION RELAY SERVICE**

1. The authority citation for Part 78 continues to read as follows:

**AUTHORITY:** Secs. 2, 3, 4, 301, 303, 307, 308, 309, 48 Stat., as amended, 1064, 1065, 1066, 1081, 1082, 1083, 1084, 1085; 47 U.S.C. 152, 153, 154, 301, 303, 307, 308, 309.

2. In Section 78.11, paragraph (g), reference to Part 21 is revised to the applicable reference in Part 101, to read as follows:

##### **§ 78.11 Permissible service.**

\* \* \* \* \*

(g) The provisions of paragraph (d) of this section and §78.13 of this part shall not apply to a licensee who has been licensed in the CARS service pursuant to §101.705 of this chapter, except that paragraph (d) of this section shall apply with respect to facilities added or cable television and other eligible systems first served after February 1, 1966.

\* \* \* \* \*

3. In Section 78.18, paragraphs (a)(4), (a)(5), (a)(6), and (a)(7), references to Part 21 and Part 94 are revised to the applicable references in Part 101, to read as follows:

##### **§ 78.18 Frequency assignments.**

(a) \* \* \*

(4) The Cable Television Relay Service is also assigned the following frequencies in the 17,700 to 19,700 MHz band. These frequencies are co-equally shared with stations in the fixed service under Parts 74 and 101 of the Commission's Rules. Applicants may use either a two-way link or one or both frequencies of a frequency pair for a one-way link and shall coordinate proposed operations pursuant to procedures required in §101.103(d). These bands may be used for analog or digital modulation.

\* \* \* \* \*

(5) *6425 to 6525 MHz - Mobile Only.* Paired and unpaired operations permitted. Use of this spectrum for direct delivery of video programs to the general public or multi-channel cable distribution is not permitted. This band is co-equally shared with mobile stations licensed pursuant to parts 74 and 101 of the Commission's Rules. \* \* \*

\* \* \* \* \*

(6) *1990-2110 MHz - Mobile only.* Use of this spectrum for direct delivery of video programs to the general public or multi-channel cable distribution is not permitted. This band is co-equally shared with stations licensed pursuant to parts 74 and 101 of the Commission's Rules. (Common carriers may use this band pursuant to provisions of §101.803(b).) \* \* \*

\* \* \* \* \*

(7) *6875-7125 MHz - Mobile only.* Use of this spectrum for direct delivery of video programs to the general public or multi-channel cable distribution is not permitted. This band is co-equally shared with stations licensed pursuant to parts 74 and 101 of the Commission's Rules. (Common carriers may use this band pursuant to provisions of §101.803(b).) \* \* \*

\* \* \* \* \*

4. In Section 78.36, paragraph (b), reference to Part 21 is revised to the applicable reference in Part 101, to read as follows:

**§ 78.36 Frequency coordination.**

\* \* \* \* \*

(b) *6425-6525 MHz and 17.7-19.7 GHz.* Coordination of fixed and mobile assignments will be in accordance with the procedure established in §101.103(d), *except* that the prior coordination process for mobile (temporary fixed) assignments may be completed orally and the period allowed for response to a coordination notification may be less than 30 days if the parties agree.

IV. Part 90 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

**PART 90 - PRIVATE LAND MOBILE RADIO SERVICES**

1. The authority citation for Part 90 continues to read as follows:

**AUTHORITY:** Secs. 4, 251-2, 303, 309, and 332, 48 Stat. 1066, as amended; 47 U.S.C. 154, 251-2, 303, 309 and 332, unless otherwise noted.

2. In Section 90.20, paragraph (d)(70), reference to Part 94 is changed to Part 101, to read as follows:

**§ 90.20 Public Safety Pool.**

\* \* \* \* \*

(d) \* \* \*

(70) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 101 of this chapter.

\* \* \* \* \*

V. Part 101 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

**PART 101 - FIXED MICROWAVE SERVICES**

1. The authority citation for Part 101 continues to read as follows:

**AUTHORITY: 47 U.S.C. Secs. 154, 303.**

2. In Section 101.31, paragraph (e)(1)(vii) is revised to read as follows:

**§ 101.31 Special temporary, temporary, and conditional authorizations.**

\* \* \* \* \*

(e) *Conditional authorization.*

(1) \* \* \*

(vii) If operated on frequencies in the 21.2-23.6 GHz band, the station does not lie within any of the following regions:

Name of Region	Dimensions	Center-Point	
	Radius in Kilometers	Latitude	Longitude
<i>Federal Government Protected Area #1</i>	xx	N xx-xx-xx	W xxx-xx-xx
<i>Federal Government Protected Area #2</i>	xx	N xx-xx-xx	W xxx-xx-xx
<i>Federal Government Protected Area #3</i>	xx	N xx-xx-xx	W xxx-xx-xx

\* \* \* \* \*

3. The table of frequency availability in Section 101.101 is amended by deleting "LTTS" and adding "CC" to the Common Carrier block for the 2450-2500 MHz band, to read as follows:

**§ 101.101 Frequency availability.**

FREQUENCY BAND (MHz)	RADIO SERVICE				
	COMMON CARRIER (Part 101)	PRIVATE RADIO (Part 101)	BROADCAST AUXILIARY (Part 74)	OTHER (Parts 15, 21, 24, 25, 74, 78, & 100)	NOTES
* * *					
2450 - 2500	CC	OFS	TV BAS	ISM	F/M/TF
* * *					

\* \* \* \* \*

4. In Section 101.103, paragraph (g) is added to read as follows:

**§ 101.103 Frequency Coordination Procedures.**

\* \* \* \* \*

(g) Applicants proposing to operate in the 21.2-23.6 GHz band must prior coordinate frequencies with Federal Government stations in accordance with the procedures of paragraph (d) of this section. Frequency coordination must be performed with all Federal Government agencies represented on the Interdepartment Radio Advisory Committee (IRAC).

5. The table of frequency tolerance in Section 101.107, paragraph (a), is amended by revising the line for the 19,700-27,500 MHz band, and adding footnote /10/ to read as follows:

**§ 101.107 Frequency tolerance.**

(a) \* \* \*

FREQUENCY TOLERANCE (PERCENT)			
Frequency (MHz)	All fixed and base stations	Mobile stations over 3 watts	Mobile stations 3 watts or less
* * *			
19,700 to 27,500 /10/	0.001		
* * *			

\* \* \* \* \*

/10/ The frequency tolerance for stations authorized on or before *[24 months after the effective date of the new rules]* is 0.03%. Existing licensees and pending applicants on that date may continue to operate after that date with a frequency tolerance of 0.03%, provided that it does not cause harmful interference to the operation of any other licensee. For exceptions, see §101.147 and §101.507.

\* \* \* \* \*



6. The table of maximum authorized bandwidth in Section 101.109, paragraph (c), is amended by revising the footnotes for the 928 to 929, 952 to 960, and 21,200 to 23,600 MHz bands; removing footnote /4/, and redesignating footnotes /5/ and /6/ as footnotes /4/ and /5/, to read as follows:

**§ 101.109 Bandwidth.**

\* \* \* \* \*

(c) \* \* \*

Frequency Band (MHz)	Maximum Authorized Bandwidth
928 to 929	25 KHz /1//5/
* * *	
952 to 960	200 KHz /1//4/
* * *	
21,200 to 23,600	50 MHz /1/
* * *	
38,600 to 40,000	50 MHz /6/

/1/ The maximum bandwidth that will be authorized for each particular frequency in this band is detailed in the appropriate frequency table in §101.147.

/2/ \* \* \*

/3/ \* \* \*

/4/ A 12.5 KHz bandwidth applies only to frequencies listed in §101.147(b)(1).

/5/ For frequencies listed in §101.147(b)(1), consideration will be given on a case-by-case basis to authorizing bandwidths up to 50 KHz.

/6/ For channel block assignments in the 38,600-40,000 MHz band, \* \* \*

\* \* \* \* \*

7. The table of antenna standards in Section 101.115, paragraph (c) is amended by deleting the line for the 10,550 to 10,680 MHz band applicable after June 1, 1997; revising the specifications for the 10,550 to 10,680 MHz and 21,200 to 23,600 MHz bands; and revising footnotes /7/ and /11/, to read as follows:

**§ 101.115 Directional antennas.**

\* \* \* \* \*

(c) \* \* \*

<b>Antenna Standards</b>										
Frequency (MHz)	Category	Maximum beamwidth to 3 dB points <sup>1</sup> (included angle in degrees)	Minimum antenna gain (dBi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
* * *										
10,550 to 10,680 <sup>7</sup>	A	3.5	33.5	20	24	28	32	35	55	55
	B	3.5	33.5	20	24	28	32	35	40	45
* * *										
21,200 to 23,600 <sup>7, 11</sup>	A	3.3	33.5	20	26	26	33	33	55	55
	B	3.3	33.5	17	24	24	29	29	40	50
* * *										

\* \* \* \* \*

/7/ For stations authorized or pending on *[effective date of the new rules]*, the minimum radiation suppression for Category B is 35 dB in the 10,550-10,680 MHz band and 36 dB in the 21,200-23,600 MHz band for discrimination angles from 100° to 180°.

\* \* \* \* \*

/11/ Except as provided in §101.147(s)(8). \* \* \*

\* \* \* \* \*

8. In Section 101.139, paragraph (g) is added to read as follows:

**§ 101.139 Authorization of transmitters.**

\* \* \* \* \*

(g) After *[18 months after the effective date of the new rules]*, the manufacture (except for export) or importation of equipment for operation in the 21,200-23,600 MHz band must meet:

(1) The 0.001% frequency tolerance requirement of §101.107(a); and

(2) For equipment employing digital modulation techniques, the minimum bit rate requirements of §101.141(a).

9. In Section 101.141, paragraph (a) is revised to include the 21,200 to 23,600 MHz band and the last sentence of paragraph (a)(1) is revised, to read as follows:

**§ 101.141 Microwave modulation.**

(a) Microwave transmitters employing digital modulation techniques and operating below 25.25 GHz must, with appropriate multiplex equipment, comply with the following additional requirements:

(1) \* \* \*

NOTE to (a)(1): Stations authorized prior to December 1, 1988 may install equipment after that date with no minimum bit rate. Stations applied for or authorized prior to *[24 months after the effective date of the new rules]* in the 21.2-23.6 GHz band may install equipment after that date with no minimum bit rate.

\* \* \* \* \*

10. Section 101.147 is amended by changing the line for the 2,450 - 2,500 MHz band in paragraph (a), revising footnotes /12/ and /26/ in paragraph (a), and revising paragraph (s), to read as follows:

**§ 101.147 Frequency assignments.**

(a) Frequencies in the following bands are available for assignment to fixed radio point-to-point microwave stations.

\* \* \*

2,450 - 2,500 MHz /12/

\* \* \*

21,200 - 22,000 MHz /4/ /11/ /12/ /13/ /24/ /25/ /26/

22,000 - 23,600 MHz /4/ /11/ /12/ /24/ /25/ /26/

\* \* \* \* \*

/12/ Frequencies in this band are available for assignment to the common carrier and private-operational fixed point-to-point microwave services.

\* \* \* \* \*

/26/ Frequencies from 21.7-22.0 and 22.9-23.2 GHz may be authorized for low power, limited coverage, systems subject to the provisions of paragraph (s) of this section.

\* \* \* \* \*

(s) 21,200 to 23,600 MHz: 50 MHz authorized bandwidth.

(1) 2.5 MHz bandwidth channels:

TRANSMIT (receive) (MHz)	RECEIVE (transmit) (MHz)
21601.25	22801.25
21603.75	22803.75
21606.25	22806.25
21608.75	22808.75
21611.25	22811.25
21613.75	22813.75
21616.25	22816.25
21618.75	22818.75
21621.25	22821.25
21623.75	22823.75
21626.25	22826.25
21628.75	22828.75
21631.25	22831.25
21633.75	22833.75
21636.25	22836.25
21638.75	22838.75
21641.25	22841.25
21643.75	22843.75
21646.25	22846.25
21648.75	22848.75
21651.25	22851.25
21653.75	22853.75
21656.25	22856.25
21658.75	22858.75
21661.25	22861.25
21663.75	22863.75
21666.25	22866.25
21668.75	22868.75
21671.25	22871.25
21673.75	22873.75
21676.25	22876.25
21678.75	22878.75
21681.25	22881.25
21683.75	22883.75
21686.25	22886.25
21688.75	22888.75
21691.25	22891.25
21693.75	22893.75
21696.25	22896.25
21698.75	22898.75
21701.25 /1/	22901.25 /1/
21703.75 /1/	22903.75 /1/
21706.25 /1/	22906.25 /1/
21708.75 /1/	22908.75 /1/
21711.25 /1/	22911.25 /1/
21713.75 /1/	22913.75 /1/
21716.25 /1/	22916.25 /1/
21718.75 /1/	22918.75 /1/
21721.25 /1/	22921.25 /1/

21723.75	/1/	22923.75	/1/
21726.25	/1/	22926.25	/1/
21728.75	/1/	22928.75	/1/
21731.25	/1/	22931.25	/1/
21733.75	/1/	22933.75	/1/
21736.25	/1/	22936.25	/1/
21738.75	/1/	22938.75	/1/
21741.25	/1/	22941.25	/1/
21743.75	/1/	22943.75	/1/
21746.25	/1/	22946.25	/1/
21748.75	/1/	22948.75	/1/
21751.25	/1/	22951.25	/1/
21753.75	/1/	22953.75	/1/
21756.25	/1/	22956.25	/1/
21758.75	/1/	22958.75	/1/
21761.25	/1/	22961.25	/1/
21763.75	/1/	22963.75	/1/
21766.25	/1/	22966.25	/1/
21768.75	/1/	22968.75	/1/
21771.25	/1/	22971.25	/1/
21773.75	/1/	22973.75	/1/
21776.25	/1/	22976.25	/1/
21778.75	/1/	22978.75	/1/
21781.25	/1/	22981.25	/1/
21783.75	/1/	22983.75	/1/
21786.25	/1/	22986.25	/1/
21788.75	/1/	22988.75	/1/
21791.25	/1/	22991.25	/1/
21793.75	/1/	22993.75	/1/
21796.25	/1/	22996.25	/1/
21798.75	/1/	22998.75	/1/
22301.25		23501.25	
22303.75		23503.75	
22306.25		23506.25	
22308.75		23508.75	
22311.25		23511.25	
22313.75		23513.75	
22316.25		23516.25	
22318.75		23518.75	
22321.25		23521.25	
22323.75		23523.75	
22326.25		23526.25	
22328.75		23528.75	
22331.25		23531.25	
22333.75		23533.75	
22336.25		23536.25	
22338.75		23538.75	
22341.25		23541.25	
22343.75		23543.75	
22346.25		23546.25	
22348.75		23548.75	
22351.25		23551.25	
22353.75		23553.75	
22356.25		23556.25	
22358.75		23558.75	
22361.25		23561.25	
22363.75		23563.75	
22366.25		23566.25	

22368.75	23568.75
22371.25	23571.25
22373.75	23573.75
22376.25	23576.25
22378.75	23578.75
22381.25	23581.25
22383.75	23583.75
22386.25	23586.25
22388.75	23588.75
22391.25	23591.25
22393.75	23593.75
22396.25	23596.25
22398.75	23598.75

/1/ These frequencies may be assigned to low power systems, as defined in paragraph (8) of this section.

(2) 5 MHz bandwidth channels:

TRANSMIT (receive) (MHz)	RECEIVE (transmit) (MHz)
21602.5	22802.5
21607.5	22807.5
21612.5	22812.5
21617.5	22817.5
21622.5	22822.5
21627.5	22827.5
21632.5	22832.5
21637.5	22837.5
21642.5	22842.5
21647.5	22847.5
21652.5	22852.5
21657.5	22857.5
21662.5	22862.5
21667.5	22867.5
21672.5	22872.5
21677.5	22877.5
21682.5	22882.5
21687.5	22887.5
21692.5	22892.5
21697.5	22897.5
21702.5 /1/	22902.5 /1/
21707.5 /1/	22907.5 /1/
21712.5 /1/	22912.5 /1/
21717.5 /1/	22917.5 /1/
21722.5 /1/	22922.5 /1/
21727.5 /1/	22927.5 /1/
21732.5 /1/	22932.5 /1/
21737.5 /1/	22937.5 /1/
21742.5 /1/	22942.5 /1/
21747.5 /1/	22947.5 /1/
21752.5 /1/	22952.5 /1/

21757.5	/1/	22957.5	/1/
21762.5	/1/	22962.5	/1/
21767.5	/1/	22967.5	/1/
21772.5	/1/	22972.5	/1/
21777.5	/1/	22977.5	/1/
21782.5	/1/	22982.5	/1/
21787.5	/1/	22987.5	/1/
21792.5	/1/	22992.5	/1/
21797.5	/1/	22997.5	/1/
22302.5		23502.5	
22307.5		23507.5	
22312.5		23512.5	
22317.5		23517.5	
22322.5		23522.5	
22327.5		23527.5	
22332.5		23532.5	
22337.5		23537.5	
22342.5		23542.5	
22347.5		23547.5	
22352.5		23552.5	
22357.5		23557.5	
22362.5		23562.5	
22367.5		23567.5	
22372.5		23572.5	
22377.5		23577.5	
22382.5		23582.5	
22387.5		23587.5	
22392.5		23592.5	
22397.5		23597.5	

/1/ These frequencies may be assigned to low power systems, as defined in paragraph (8) of this section.

(3) 10 MHz bandwidth channels:

TRANSMIT (receive) (MHz)	RECEIVE (transmit) (MHz)
21205	22405
21215	22415
21225	22425
21235	22435
21245	22445
21255	22455
21265	22465
21275	22475
21285	22485
21295	22495
21305	22505
21315	22515
21325	22525
21335	22535
21345	22545



21355	.....	22555	
21365	.....	22565	
21375	.....	22575	
21385	.....	22585	
21395	.....	22595	
21405	.....	22605	
21415	.....	22615	
21425	.....	22625	
21435	.....	22635	
21445	.....	22645	
21455	.....	22655	
21465	.....	22665	
21475	.....	22675	
21485	.....	22685	
21495	.....	22695	
21505	.....	22705	
21515	.....	22715	
21525	.....	22725	
21535	.....	22735	
21545	.....	22745	
21555	.....	22755	
21565	.....	22765	
21575	.....	22775	
21585	.....	22785	
21595	.....	22795	
21605	/1/ .....	22805	/1/
21615	/1/ .....	22815	/1/
21625	/1/ .....	22825	/1/
21635	/1/ .....	22835	/1/
21645	/1/ .....	22845	/1/
21655	/1/ .....	22855	/1/
21665	/1/ .....	22865	/1/
21675	/1/ .....	22875	/1/
21685	/1/ .....	22885	/1/
21695	/1/ .....	22895	/1/
21705	/1//2/ .....	22905	/1//2/
21715	/1//2/ .....	22915	/1//2/
21725	/1//2/ .....	22925	/1//2/
21735	/1//2/ .....	22935	/1//2/
21745	/1//2/ .....	22945	/1//2/
21755	/1//2/ .....	22955	/1//2/
21765	/1//2/ .....	22965	/1//2/
21775	/1//2/ .....	22975	/1//2/
21785	/1//2/ .....	22985	/1//2/
21795	/1//2/ .....	22995	/1//2/
21805	/2/ .....	23005	/2/
21815	/2/ .....	23015	/2/
21825	/2/ .....	23025	/2/
21835	/2/ .....	23035	/2/
21845	/2/ .....	23045	/2/
21855	/2/ .....	23055	/2/
21865	/2/ .....	23065	/2/
21875	/2/ .....	23075	/2/
21885	/2/ .....	23085	/2/
21895	/2/ .....	23095	/2/
21905	/2/ .....	23105	/2/
21915	/2/ .....	23115	/2/
21925	/2/ .....	23125	/2/